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NOTICES FROM THE LICK OBSERVATORY.*

PREPARED BY MEMBERS OF THE STAFF.

USE OF THE CROSSLEY REFLECTOR FOR PHOTOGRAPHIC MEASUREMENTS OF POSITION.

Although the observation of asteroids is not intended to be a regular part of the work of the Lick Observatory, a good many observations of these bodies have been made here during the past year. All the Watson asteroids have been observed for the National Academy of Sciences, and in the course of this work a number of new asteroids have been discovered and regularly observed.

It sometimes happens that an asteroid cannot be found readily with visual or with small photographic telescopes. It may be situated in the Milky Way, where the number of stars is confusing, or it may be faint or moving very slowly. If found, there may be no catalogue-stars near enough to it for purposes of comparison.

In such cases the Crossley reflector has furnished a convenient means for both finding the asteroid and determining its position. The method of observation is as follows: The field having been identified by means of a DM. chart, an exposure of half an hour is given to the photographic plate, in the usual manner. The slide is then closed, the guiding eye-piece of the double-slide plate-holder is slipped along two or three hundredths of an inch and again clamped, and the guiding-star is brought to the new position of the cross-wires. Another exposure of (say) two minutes is then given, the times of beginning and end being accurately noted. Finally, the slide is partly drawn, the driving-clock stopped, and stars are allowed to trail over the lower third of the plate for several minutes.

On the resulting negative, all the star-images are double. The stronger images serve for purposes of identification, and the weaker images for exact measurement. The diameter of the smallest star-discs should not exceed $1''.5$ or $2''.0$. The corresponding images of the asteroid are respectively a trail, and an image which is not distinguishable from a disc, and which, in the subsequent measurement of the plate, is referred to the short-exposure images of the stars. The trails serve for the accurate orientation of the plate.

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On a photograph of the asteroid (439) *Ohio*, made on the night of December 27, 1899, and measured by Mr. CODDINGTON, there are eleven catalogue-stars. The mean position of the asteroid, at the mean time of exposure, $13^h\ 10^m\ 35^s$ P. S. T., is R. A. $= 7^h\ 27^m\ 42^s.221$; Decl. $= -6^\circ\ 9'\ 26''.79$.

Comparison of the mean with the individual measures gives the following residuals (Mean – Obs.):

Comparison-Star.	Residual, R. A.	Residual, Decl.
DM. — $5^\circ 2165$	$-0^s.068$	$-0''.56$
— 6 2167	-0.054	$+0.73$
— 6 2162	-0.030	$+0.68$
— 6 2184	$+0.056$	$+0.56$
— 6 2166	$+0.064$	-0.97
— 6 2153	$+0.039$	-0.27
— 6 2156	$+0.003$	$+0.44$
— 6 2158	-0.056	-0.07
— 6 2146	$+0.025$	$+0.31$
— 6 2150	-0.038	$+0.04$
— 6 2185	-0.051	-0.90

The probable error of the mean is, therefore, in R. A. $\pm 0^s.010$; in Decl. $\pm 0''.12$. It will be seen that this result is comparable with the best measurement by visual methods, J. E. K.

THE CROCKER–LICK OBSERVATORY ECLIPSE EXPEDITION.

By the generosity of Mr. WILLIAM H. CROCKER, of San Francisco, the Lick Observatory will be able to send a party to Georgia, to observe the total solar eclipse of May 28th. Only two observers, Messrs. W. W. CAMPBELL and C. D. PERRINE, will be sent out from the Observatory; but several European astronomers have expressed a desire to join the party, and similar requests have also been received from astronomers connected with American colleges which do not intend to send out expeditions of their own.

I take this opportunity to acknowledge the indebtedness of the Lick Observatory to Mr. CROCKER for his generous assist-